

7. LAMPIRAN

LAMPIRAN 1. Pembuatan Media untuk Isolasi hingga Uji Probiotik

Medium broth deMan Rogosa Sharpe (MRS) Merck

Pembuatan media cair MRS *broth* dilakukan dengan melarutkan MRS *broth* dengan perbandingan 52,2 gram dalam 1 liter aquades. Larutan disterilisasi menggunakan autoklaf pada suhu 121°C selama 15 menit. Komposisi pada 1 liter larutan MRS *broth* adalah 10 gram kasein/ daging pepton, 8 gram ekstrak daging, 4 gram ekstrak *yeast*, 20 gram D (+)-glucose, 2 gram *di-Potassium hydrogen phosphate*, 1 ml *tween 80*, 2 gram *di-ammonium hydrogen citrate*, 5 gram *sodium acetate*, 0,2 gram *magnesium sulfate*, dan 0,04 gram *manganese sulfate*.

Medium Agar MRS Merck

Pembuatan media padat MRS Agar dilakukan dengan melarutkan MRS Agar dengan perbandingan 68,2 gram dalam 1 liter aquades. Larutan dipanaskan sambil diaduk hingga mengental menggunakan *hot plate* dan *stirrer*. MRS Agar disterilisasi menggunakan autoklaf pada suhu 121°C selama 15 menit. Komposisi pada 1 liter larutan MRS Agar adalah 10 gram pepton kasein, 10 gram ekstrak daging, 4 gram ekstrak *yeast*, 20 gram D (+)-glucose, 2 gram *di-Kalium hydrogen phosphate*, 1 gram *tween 80*, 2 gram *ammonium-hydrogencitrate*, 5 gram *sodium acetate*, 0,2 gram *magnesium sulfate*, 0,04 gram *manganese sulfate*, dan 14 gram agar.

Medium Nutrient Agar (NA)

Pembuatan media padat *Nutrient Agar* (NA) dilakukan dengan cara melarutkan 23 gram bubuk NA dalam 1 liter aquades. Larutan media NA dipanaskan dan diaduk hingga mengental dengan menggunakan *hot plate* dan *stirrer*. Media NA selanjutnya disterilisasi menggunakan autoklaf pada suhu 121°C selama 15 menit. Komposisi 1 liter media NA terkandung 5 gram pepton daging, 3 gram ekstrak daging, dan 12 gram agar.

LAMPIRAN 2. Larutan Standar Mc Farland 3 dan 5

Pembeuatan Larutan Standar Mc Farland 3 dilakukan dengan mencampurkan 0,3 ml BaCl_2 1 % dan 9,7 ml H_2SO_4 1 %. Pembuatan Larutan Standar Mc Farland 5 terdiri dari 0,5 ml BaCl_2 1 % dan 9,5 ml H_2SO_4 1 %. Larutan Standar Mc Farland 3 digunakan untuk menunjukkan konsentrasi bakteri setara dengan 900 CFU ($\times 10^6$ / ml). Larutan Standar Mc Farland 5 digunakan untuk menunjukkan konsentrasi bakteri setara dengan 1500 CFU ($\times 10^6$ / ml).



LAMPIRAN 3. Data Nilai Absorbansi Uji Pertumbuhan Bakteri Asam Laktat pada Kondisi NaCl, Suhu, dan pH yang Berbeda

Tabel 6. Data Absorbansi Uji Genus Bakteri Asam Laktat dari Fermentasi dengan Kadar Garam 5%

Isolat	Ulangan	NaCl				Suhu				pH			
		6,5%		18%		10°C		45°C		4,4		9,6	
		24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam
S1C1	1	1,2116	1,2802	0,0525	0,0668	0,1487	0,2033	2,1526	2,1723	2,1600	2,2265	0,0428	0,0421
	2	1,2309	1,2809	0,0527	0,0670	0,1522	0,2060	2,1522	2,1725	2,1585	2,2288	0,0428	0,0420
	3	1,2366	1,2825	0,0527	0,0673	0,1534	0,2079	2,1504	2,1728	2,1584	2,2302	0,0428	0,0421
S1C3	1	1,5810	1,5516	0,0448	0,0464	0,2009	0,2480	2,1593	2,1645	2,1501	2,2045	2,0422	2,1491
	2	1,5875	1,5535	0,0449	0,0465	0,2017	0,2529	2,1660	2,1694	2,1488	2,2046	2,0424	2,1512
	3	1,5892	1,5573	0,0450	0,0464	0,2005	0,2558	2,1705	2,1712	2,1498	2,2047	2,0425	2,1518
S1C4	1	1,8250	1,8130	0,0551	0,0605	0,1844	0,2619	2,2029	2,2005	2,1395	2,2631	2,0202	2,2141
	2	1,8260	1,8130	0,0555	0,0604	0,1864	0,2613	2,2078	2,2018	2,1430	2,2644	2,0215	2,2159
	3	1,8290	1,8130	0,0555	0,0601	0,1874	0,2615	2,2122	2,2034	2,1454	2,2647	2,0223	2,2162
S1C5	1	1,2556	2,1568	0,0452	0,0548	0,1521	0,1891	2,1860	2,1839	2,1042	2,2605	0,0395	0,0453
	2	1,2716	2,1820	0,0447	0,0546	0,1501	0,1910	2,1881	2,1882	2,1034	2,2609	0,0396	0,0453
	3	1,2806	2,1835	0,0445	0,0546	0,1505	0,1954	2,1912	2,1895	2,1043	2,2611	0,0397	0,0452
S1C10	1	1,7665	1,6038	0,0489	0,0519	0,2194	0,2722	2,1881	2,1832	2,1009	2,2808	1,9645	2,1480
	2	1,7695	1,6016	0,0489	0,0518	0,2129	0,2732	2,1899	2,1860	2,1052	2,2818	1,9614	2,1511
	3	1,7709	1,6038	0,0488	0,0520	0,2081	0,2745	2,1925	2,1885	2,1097	2,2824	1,9601	2,1522

Lanjutan Tabel 6.

S3C2	1	1,7145	2,0269	0,0505	0,0535	0,1867	0,2309	2,1956	2,1873	2,0735	2,2760	2,0972	2,2437
	2	1,7146	2,0325	0,0503	0,0535	0,1876	0,2309	2,1960	2,1884	2,0745	2,2762	2,0978	2,2448
	3	1,7172	2,0325	0,0496	0,0536	0,1879	0,2329	2,1965	2,1904	2,0747	2,2765	2,0984	2,2455
S3C3	1	1,5212	2,0750	0,0496	0,0535	0,1552	0,1912	2,1477	2,2112	2,1074	2,2465	2,1239	2,2499
	2	1,5285	2,0756	0,0431	0,0536	0,1559	0,1911	2,1498	2,2120	2,1058	2,2457	2,1243	2,2494
	3	1,5326	2,0745	0,0432	0,0452	0,1536	0,1917	2,1492	2,2097	2,1049	2,2455	2,1244	2,2492
S3C4	1	1,7576	2,2506	0,1056	0,0607	0,2189	0,2531	2,1817	2,2021	2,1325	2,2342	1,9819	2,2169
	2	1,7581	2,2507	0,1194	0,0604	0,2139	0,2540	2,1835	2,2091	2,1305	2,2347	1,9824	2,2166
	3	1,7605	2,2505	0,1225	0,0610	0,2044	0,2535	2,1852	2,2120	2,1287	2,2351	1,9830	2,2171
S3C7	1	0,5898	2,1281	0,0579	0,0612	0,1730	0,1844	2,1544	2,1786	2,1497	2,2004	1,6067	2,1519
	2	0,5968	2,1281	0,0581	0,0609	0,1709	0,1841	2,1551	2,1792	2,1486	2,2006	1,6082	2,1524
	3	0,5983	2,1351	0,0583	0,0613	0,1659	0,1831	2,1539	2,1804	2,1481	2,2013	1,6099	2,1525
S3C10	1	1,0908	2,3005	0,0576	0,0574	0,1766	0,2155	2,1386	2,2311	2,1792	2,2378	1,6199	2,1833
	2	1,1171	2,3113	0,0583	0,0573	0,1776	0,2162	2,1414	2,2341	2,1791	2,2366	1,6171	2,1860
	3	1,1230	2,3113	0,0573	0,0574	0,1783	0,2158	2,1429	2,2357	2,1799	2,2368	1,6144	2,1871
S3C11	1	1,7315	2,3573	0,0572	0,0645	0,1582	0,2129	2,1634	2,1904	2,1226	2,2446	2,0136	2,1847
	2	1,7390	2,3571	0,0572	0,0632	0,1590	0,2136	2,1698	2,1917	2,1223	2,2450	2,0139	2,1842
	3	1,7453	2,3569	0,0575	0,0624	0,1585	0,2130	2,1739	2,1930	2,1215	2,2453	2,0141	2,1843
S3C13	1	1,6104	1,9496	0,0549	0,0614	0,1571	0,2007	2,1403	2,1688	2,1538	2,2291	1,1816	2,2189
	2	1,6161	1,9640	0,0545	0,0609	0,1575	0,2016	2,1400	2,1739	2,1546	2,2289	1,1806	2,2187
	3	1,6214	1,9640	0,0543	0,0667	0,1560	0,2026	2,1412	2,1783	2,1558	2,2286	1,1799	2,2189
S3C15	1	1,6609	2,3335	0,0453	0,0375	0,0995	0,1435	2,1664	2,1514	2,1280	2,2390	0,0157	0,0211
	2	1,6606	2,3335	0,0456	0,0378	0,0977	0,1411	2,1675	2,1535	2,1266	2,2383	0,0156	0,0211
	3	1,6592	2,3451	0,0452	0,0381	0,0982	0,1402	2,1698	2,1559	2,1232	2,2382	0,0154	0,0209

Lanjutan Tabel 6.

S3C20	1	1,3734	1,3743	0,0497	0,0564	0,1163	0,1702	1,9245	2,2470	2,1042	2,2827	2,0704	2,2317
	2	1,3664	1,3895	0,0496	0,0565	0,1176	0,1751	1,9260	2,2478	2,1027	2,2828	2,0710	2,2315
	3	1,3683	1,3975	0,0497	0,0570	0,1173	0,1780	1,9256	2,2489	2,1022	2,2830	2,0715	2,2317
S3C22	1	1,4447	2,2799	0,0440	0,0509	0,1500	0,1996	2,0666	2,1967	2,1424	2,2191	1,6953	2,2178
	2	1,4560	2,2670	0,0442	0,0511	0,1502	0,1999	2,0720	2,1980	2,1412	2,2188	1,6954	2,2170
	3	1,4610	2,2698	0,0452	0,0514	0,1494	0,1993	2,0766	2,2103	2,1407	2,2187	1,6951	2,2178
S3C23	1	1,6144	2,3450	0,0558	0,0635	0,1465	0,2218	2,1750	2,2057	2,1394	2,2269	1,8470	2,0954
	2	1,6158	2,3451	0,0565	0,0632	0,1474	0,2261	2,1786	2,2085	2,1433	2,2266	1,8480	2,0959
	3	1,6181	2,3452	0,0565	0,0634	0,1543	0,2313	2,1819	2,2106	2,1447	2,2262	1,8487	2,0966
S3C26	1	1,7319	2,3223	0,0366	0,0338	0,1304	0,1890	2,1397	2,1055	2,1221	2,2576	1,9015	2,2373
	2	1,7333	2,3335	0,0367	0,0342	0,1313	0,1893	2,1418	2,1039	2,1210	2,2583	1,9014	2,2369
	3	1,7353	2,4510	0,0368	0,0339	0,1320	0,1898	2,1457	2,1051	2,1236	2,2585	1,9018	2,2371
S3C27	1	1,4652	2,3453	0,0534	0,0540	0,1643	0,2082	2,1252	2,1601	2,1556	2,2103	1,5571	2,2211
	2	1,4671	2,3451	0,0537	0,0538	0,1681	0,2104	2,1271	2,1621	2,1565	2,2108	1,5560	2,2213
	3	1,4698	2,3450	0,0538	0,0540	0,1683	0,2126	2,1287	2,1641	2,1547	2,2107	1,5551	2,2216
S3C28	1	1,5473	2,3225	0,0526	0,0547	0,1314	0,1821	2,1887	2,1804	2,1524	2,2092	1,7172	2,2324
	2	1,5529	2,3222	0,0527	0,0547	0,1317	0,1827	2,1893	2,1818	2,1566	2,2097	1,7182	2,2349
	3	1,5554	2,3220	0,0528	0,0546	0,1316	0,1833	2,1901	2,1793	2,1602	2,2100	1,7192	2,2366
S3C31	1	1,5106	2,3223	0,0486	0,0563	0,1523	0,2519	2,1518	2,1611	2,0997	2,2563	1,8672	2,2152
	2	1,5123	2,3335	0,0483	0,0565	0,1532	0,2505	2,1503	2,1659	2,1057	2,2569	1,8680	2,2160
	3	1,5213	2,3259	0,0487	0,0563	0,1544	0,2504	2,1502	2,1694	2,1102	2,2570	1,8684	2,2162
S3C32	1	1,2620	2,3340	0,0560	0,0624	0,1480	0,1909	2,1559	2,1611	2,1208	2,2362	1,9036	2,0869
	2	1,2674	2,3339	0,0554	0,0623	0,1479	0,1955	2,1538	2,1666	2,1216	2,2362	1,9032	2,0860
	3	1,2718	2,3335	0,0562	0,0615	0,1481	0,1975	2,1511	2,1704	2,1212	2,2362	1,9024	2,0858

Lanjutan Tabel 6.

S3C33	1	1,6809	2,3590	0,0470	0,0499	0,1141	0,1671	2,1397	2,1805	2,0992	2,2476	1,3705	2,2251
	2	1,6835	2,3582	0,0460	0,0498	0,1140	0,1687	2,1416	2,1839	2,0991	2,2474	1,3703	2,2256
	3	1,6864	2,3570	0,0454	0,0500	0,1129	0,1683	2,1434	2,1843	2,0964	2,2475	1,3715	2,2259
S3C34	1	1,6619	2,3693	0,0449	0,0546	0,1373	0,2138	2,1237	2,1864	2,1253	2,2321	1,9226	2,1279
	2	1,6645	2,3690	0,0453	0,0547	0,1383	0,2122	2,1276	2,1919	2,1256	2,2326	1,9227	2,1293
	3	1,6643	2,3696	0,0458	0,0547	0,1379	0,2106	2,1296	2,1959	2,1261	2,2327	1,9230	2,1294
S3C35	1	1,5276	2,2799	0,0587	0,0675	0,1586	0,2177	2,1660	2,1838	2,1230	2,2824	1,8567	2,1271
	2	1,5254	2,2900	0,0587	0,0675	0,1575	0,2188	2,1669	2,1863	2,1244	2,2823	1,8563	2,1244
	3	1,5272	2,2900	0,0588	0,0675	0,1563	0,2195	2,1627	2,1882	2,1250	2,2827	1,8562	2,1232
S3C38	1	1,6327	2,3113	0,0509	0,0603	0,1438	0,1992	2,1246	2,2028	2,0973	2,2793	2,0901	2,2547
	2	1,6340	2,3223	0,0545	0,0605	0,1436	0,1997	2,1234	2,2049	2,0996	2,2796	2,0912	2,2552
	3	1,6368	2,3225	0,0546	0,0607	0,1405	0,2002	2,1208	2,2060	2,0992	2,2800	2,0923	2,2544
S3C39	1	1,5939	2,3129	0,0393	0,0463	0,1247	0,1761	2,1519	2,1582	2,0871	2,2400	2,0871	2,2131
	2	1,5915	2,3130	0,0392	0,0463	0,1250	0,1769	2,1526	2,1550	2,0884	2,2396	2,0879	2,2134
	3	1,5844	2,3125	0,0394	0,0464	0,1260	0,1773	2,1527	2,1557	2,0877	2,2395	2,0884	2,2135
S3C40	1	1,5481	2,2410	0,0621	0,0664	0,1501	0,2374	2,1781	2,2038	2,1531	2,2298	1,8774	2,1213
	2	1,5460	2,2411	0,0620	0,0636	0,1513	0,2357	2,1758	2,2067	2,1528	2,2304	1,8774	2,1264
	3	1,5474	2,2415	0,0624	0,0634	0,1526	0,2322	2,1762	2,2088	2,1577	2,2208	1,8782	2,1281

Tabel 7. Data Nilai Absorbansi Uji Genus Bakteri Asam Laktat dari Fermentasi dengan Kadar Garam 7,5%

Isolat	Ulangan	NaCl				Suhu				pH			
		6,5%		18%		10°C		45°C		4,4		9,6	
		24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam	24 Jam	48 Jam
T1C2	1	2,1652	2,0982	0,0596	0,0523	0,2298	0,1887	2,1725	2,1731	2,1168	2,2659	2,0331	2,2612
	2	2,1652	2,0963	0,0598	0,0517	0,2340	0,1906	2,1736	2,1727	2,1188	2,2658	2,0339	2,2616
	3	2,1730	2,0918	0,0601	0,0518	0,2382	0,1903	2,1753	2,1726	2,1209	2,2663	2,0349	2,2617
T1C4	1	1,9591	2,0992	0,0577	0,0494	0,1782	0,1561	2,1312	2,1417	2,1408	2,2269	1,9871	2,2374
	2	1,9640	2,1003	0,0577	0,0499	0,1763	0,1577	2,1299	2,1430	2,1424	2,2282	1,9877	2,2376
	3	1,9640	2,0983	0,0579	0,0490	0,1746	0,1578	2,1323	2,1444	2,1420	2,2296	1,9882	2,2369
T1C7	1	1,9048	2,0016	0,0685	0,0609	0,1676	0,1388	2,1183	2,1446	2,1211	2,2458	1,9213	2,2353
	2	1,9048	1,9980	0,0690	0,0611	0,1674	0,1384	2,1215	2,1480	2,1183	2,2433	1,9213	2,2355
	3	1,9091	1,9961	0,0691	0,0605	0,1695	0,1385	2,1241	2,1498	2,1193	2,2458	1,9218	2,2363
T1C8	1	1,9995	2,0704	0,0530	0,0471	0,1635	0,1522	2,1140	2,1156	2,1391	2,2422	1,9960	2,1873
	2	2,0049	2,0712	0,0533	0,0480	0,1647	0,1531	2,1105	2,1177	2,1409	2,2428	1,9961	2,1873
	3	2,0049	2,0740	0,0532	0,0488	0,1652	0,1540	2,1029	2,1183	2,1404	2,2426	1,9964	2,1876
T1C10	1	1,8759	2,0697	0,0645	0,0624	0,1581	0,1215	2,1095	2,1236	2,0885	2,2267	1,8727	2,1176
	2	1,8799	2,0716	0,0636	0,0614	0,1604	0,1228	2,1139	2,1252	2,0903	2,2254	1,8736	2,1199
	3	1,8881	2,0756	0,0654	0,0613	0,1614	0,1250	2,1153	2,1258	2,0921	2,2250	1,8747	2,1209
T1C13	1	2,1005	2,0837	0,0571	0,0485	0,1838	0,1395	2,1667	2,1358	2,1458	2,2139	1,9766	2,1566
	2	2,1009	2,0829	0,0575	0,0485	0,1847	0,1397	2,1637	2,1344	2,1457	2,2141	1,9763	2,1569
	3	2,1001	2,0831	0,0577	0,0490	0,1835	0,1400	2,1705	2,1333	2,1446	2,2146	1,9761	2,1574
T1C15	1	2,0683	2,0618	0,0530	0,0465	0,1720	0,1679	2,1811	2,1414	2,1238	2,2328	2,1237	2,3072
	2	2,0682	2,0610	0,0528	0,0471	0,1698	0,1733	2,1824	2,1463	2,1253	2,2330	2,1231	2,3077
	3	2,0745	2,0620	0,0527	0,0473	0,1702	0,1717	2,1848	2,1500	2,1266	2,2329	2,2135	2,3082

Lanjutan Tabel 7.

T1C17	1	2,1005	2,0983	0,0610	0,0559	0,2160	0,2317	2,1217	2,1522	2,1262	2,2372	2,0464	2,2594
	2	2,1072	2,0994	0,0614	0,0559	0,2198	0,2319	2,1211	2,1549	2,1285	2,2373	2,0474	2,2605
	3	2,1072	2,1009	0,0620	0,0562	0,2206	0,2324	2,1206	2,1566	2,1289	2,2372	2,0484	2,2605
T1C18	1	1,9890	2,0534	0,0825	0,0762	0,2504	0,2235	2,1296	2,1589	2,0995	2,2445	2,1161	2,2330
	2	1,9943	2,0550	0,0830	0,0753	0,2518	0,2252	2,1364	2,1632	2,1024	2,2450	2,1161	2,2350
	3	1,9890	2,0586	0,0829	0,0753	0,2538	0,2257	2,1336	2,1619	2,1062	2,2453	2,1168	2,2369
T1C21	1	1,9402	2,0873	0,0576	0,0518	0,1940	0,1555	2,1414	2,1572	2,1136	2,2410	1,8971	2,1188
	2	1,9447	2,0886	0,0580	0,0519	0,1984	0,1558	2,1391	2,1572	2,1152	2,2414	1,8980	2,1230
	3	1,9449	2,0884	0,0589	0,0532	0,2041	0,1564	2,1437	2,1572	2,1189	2,2418	1,8984	2,1247
T1C24	1	1,8601	2,2702	0,0667	0,0565	0,1736	0,2071	2,1409	2,1090	2,1590	2,2149	2,0626	2,2058
	2	1,8602	2,2698	0,0668	0,0547	0,1720	0,2093	2,1457	2,1132	2,1550	2,2159	2,0634	2,2061
	3	1,8600	2,2698	0,0671	0,0569	0,1721	0,2136	2,1490	2,1161	2,1544	2,2161	2,0644	2,2059
T1C25	1	2,0561	2,0857	0,0543	0,0490	0,1646	0,2725	2,1182	2,1434	2,1444	2,2351	2,0431	2,2669
	2	2,0562	2,0847	0,0546	0,0480	0,1685	0,2689	2,1122	2,1481	2,1415	2,2356	2,0433	2,2673
	3	2,0557	2,0797	0,0547	0,0468	0,1730	0,2672	2,1116	2,1517	2,1399	2,2357	2,0439	2,2678
T1C26	1	2,0806	2,0952	0,0585	0,0517	0,1935	0,1733	2,2162	2,1273	2,1575	2,2074	2,0130	2,2539
	2	2,0803	2,0923	0,0586	0,0525	0,1954	0,1730	2,2170	2,1306	2,1628	2,2086	2,0137	2,2533
	3	2,0816	2,0912	0,0591	0,0527	0,1959	0,1724	2,2172	2,1323	2,1642	2,2090	2,0143	2,2526
T1C28	1	2,0541	2,0698	0,0509	0,0472	0,1854	0,2292	2,1855	2,1893	2,1394	2,2121	2,0770	2,2603
	2	2,0550	2,0710	0,0506	0,0474	0,1879	0,2325	2,1867	2,1969	2,1396	2,2135	2,0778	2,2604
	3	2,0546	2,0719	0,0508	0,0471	0,1842	0,2309	2,1862	2,1943	2,1393	2,2142	2,0779	2,2604
T1C29	1	1,5497	2,0074	0,0546	0,0515	0,1666	0,2323	2,2001	2,1799	2,1322	2,2612	0,0568	2,2381
	2	1,5474	2,0083	0,0544	0,0505	0,1644	0,2339	2,2005	2,1822	2,1295	2,2619	0,0568	2,2379
	3	1,5468	2,0064	0,0548	0,0504	0,1657	0,2354	2,2002	2,1837	2,1265	2,2622	0,0569	2,2380

Lanjutan Tabel 7.

T1C30	1	1,9738	2,0634	0,0492	0,0392	0,2144	0,3260	2,2007	2,1827	2,1346	2,2412	1,9667	0,0569
	2	1,9790	2,0612	0,0502	0,0395	0,2150	0,3268	2,2009	2,1852	2,1341	2,2422	1,9671	0,0569
	3	1,9880	2,0590	0,0510	0,0397	0,2167	0,3265	2,2010	2,1869	2,1346	2,2430	1,9673	0,0568
T2C1	1	0,6488	2,0145	0,0497	0,0497	0,1834	0,2211	2,1717	2,1971	2,1116	2,2606	1,7719	2,2636
	2	0,6542	2,0119	0,0500	0,0490	0,1824	0,2210	2,1646	2,1968	2,1182	2,2612	1,7727	2,2639
	3	0,6554	2,0087	0,0503	0,0487	0,1830	0,2236	2,1695	2,1988	2,1212	2,2618	1,7730	2,2637
T2C2	1	1,6880	1,9458	0,0967	0,0792	0,2372	0,5157	2,0228	2,0983	2,1331	2,2132	1,9538	2,2849
	2	1,6854	1,9405	0,0961	0,0785	0,2382	0,5171	2,0315	2,1007	2,1345	2,2142	1,9545	2,2852
	3	1,6829	1,9322	0,0955	0,0789	0,2374	0,5174	2,0374	2,1023	2,1347	2,2148	1,9549	2,2846
T2C7	1	0,4261	1,9971	0,0576	0,0476	0,1429	0,1932	2,1605	2,1795	2,0996	2,2494	1,8636	2,1927
	2	0,4258	1,9976	0,0580	0,0482	0,1417	0,1921	2,1544	2,1786	2,1005	2,2497	1,8639	2,1937
	3	0,4256	1,9980	0,0582	0,0478	0,1408	0,1938	2,1557	2,1811	2,1019	2,2501	1,8643	2,1944
T2C8	1	1,6278	2,0153	0,0979	0,0771	0,2754	0,4269	2,1426	2,1310	2,2165	2,2459	2,0767	2,2418
	2	1,6345	2,0162	0,0976	0,0756	0,2767	0,4321	2,1438	2,1275	2,2167	2,2463	2,0770	2,2423
	3	1,6368	2,0162	0,0977	0,0748	0,2757	0,4367	2,1424	2,1254	2,2167	2,2464	2,0771	2,2423
T2C10	1	1,7672	1,9494	0,1031	0,0978	0,1704	0,3156	2,0376	2,0699	2,1042	2,1891	2,1244	2,2615
	2	1,7648	1,9417	0,1028	0,0996	0,1674	0,3149	2,0350	2,0757	2,1057	2,1890	2,1247	2,2615
	3	1,7636	1,9339	0,1038	0,1006	0,1697	0,3148	2,0370	2,0797	2,1066	2,1887	2,1251	2,2615
T2C13	1	0,4681	2,0278	0,0747	0,0636	0,1339	0,1950	2,1742	2,1854	2,0702	2,2437	1,8718	2,1479
	2	0,4689	2,0284	0,0751	0,0639	0,1342	0,1949	2,1746	2,1895	2,0738	2,2436	1,8715	2,1486
	3	0,4696	2,0275	0,0753	0,0635	0,1332	0,1959	2,1752	2,1912	2,0769	2,2437	1,8714	2,1488
T2C14	1	2,1073	2,0708	0,0886	0,0658	0,1691	0,1702	2,0590	2,0411	2,2218	2,2502	2,0612	2,2425
	2	2,1071	2,0663	0,0890	0,0670	0,1688	0,1717	2,0588	2,0491	2,2238	2,2503	2,0613	2,2427
	3	2,1140	2,0618	0,0894	0,0698	0,1694	0,1756	2,0581	2,0529	2,2249	2,2509	2,0621	2,2428

Lanjutan Tabel 7.

T2C15	1	1,2196	2,0804	0,0665	0,0595	0,1625	0,1850	2,1724	2,1865	2,1378	2,2299	1,8636	2,1379
	2	1,2249	2,0807	0,0664	0,0596	0,1714	0,1842	2,1741	2,1840	2,1351	2,2300	1,8650	2,1372
	3	1,2294	2,0829	0,0667	0,0581	0,1648	0,1831	2,1739	2,1811	2,1354	2,2303	1,8664	2,1363
T3C3	1	1,9265	2,0666	0,5020	0,0450	0,1317	0,1688	2,1725	2,1870	2,0849	2,2817	0,1230	0,1279
	2	1,9308	2,0658	0,0500	0,0448	0,1313	0,1677	2,1706	2,1913	2,0885	2,2827	0,1230	0,1281
	3	1,9312	2,0621	0,0504	0,0444	0,1299	0,1700	2,1717	2,1879	2,0910	2,2829	0,1230	0,1283
T3C4	1	1,6233	2,0897	0,0487	0,0397	0,1670	0,2065	2,1668	2,1730	2,1150	2,2775	1,9739	2,2021
	2	1,6323	2,0910	0,0481	0,0394	0,1691	0,2042	2,1674	2,1771	2,1130	2,2777	1,9740	2,2026
	3	1,6368	2,0920	0,0479	0,0398	0,1701	0,2073	2,1674	2,1753	2,1114	2,2778	1,9742	2,2042
T3C5	1	1,4509	2,0502	0,0483	0,0455	0,1362	0,1853	2,1783	2,1573	2,1211	2,2443	1,7902	2,2783
	2	1,4480	2,0491	0,0483	0,0457	0,1350	0,1855	2,1818	2,1636	2,1223	2,2446	1,7903	2,2794
	3	1,4495	2,0412	0,0485	0,0455	0,1329	0,1874	2,1798	2,1620	2,1261	2,2447	1,7906	2,2800

LAMPIRAN 4. Perbedaan Karakteristik Bakteri Asam Laktat

Tabel 8. Perbedaan Karakteristik Bakteri Asam Laktat Berdasarkan Bentuk Sel dan Kemampuan Pertumbuhan pada Kondisi yang Berbeda

Genus Bakteri	Bentuk	Karakteristik Pertumbuhan						
		Produksi Gas	Suhu		Kadar NaCl		pH	
			10°C	45°C	6,5%	18%	4,4	9,6
<i>Carnabacterium</i>	Batang	-	+	-	ND	-	ND	-
<i>Lactobacillus</i>	Batang	+/-	+/-	+/-	+/-	-	+/-	-
<i>Aerococcus</i>	Bulat	-	-	-	+	-	-	+
<i>Enterococcus</i>	Bulat	-	-	+	+	-	+	+
<i>Lactococcus</i>	Bulat	-	+	-	-	-	+/-	-
<i>Leuconostoc</i>	Bulat	+	+	-	+/-	-	+/-	-
<i>Pediococcus</i>	Bulat	-	+/-	+/-	+/-	-	+	-
<i>Streptococcus</i>	Bulat	-	+	-	-	-	-	-

Keterangan:

- + : dapat tumbuh
 - : tidak dapat tumbuh
 ND : tidak diketahui

(Rahayu & Margino, 1997).

**LAMPIRAN 5. Uji Pendahuluan Pengukuran pH Proses Fermentasi Kubis Putih
Tawangmangu, Surakarta pada Kadar Garam 5% dan 7,5%**

Tabel 9. Hasil Uji Pendahuluan Pengukuran pH Proses Fermentasi Kubis Putih
Tawangmangu, Surakarta pada Kadar Garam 5% dan 7,5%

Hari	Ulangan	pH	
		Kadar Garam 5%	Kadar Garam 7,5%
0	1	6,39	6,54
	2	6,36	6,55
	3	6,37	6,55
1	1	5,74	5,84
	2	5,76	5,85
	3	5,75	5,85
2	1	5,16	5,29
	2	5,17	5,28
	3	5,16	5,28
3	1	4,34	4,16
	2	4,32	4,17
	3	4,32	4,19
4	1	3,56	4,01
	2	3,55	4,01
	3	3,56	4,02
5	1	3,56	4,01
	2	3,57	4,01
	3	3,57	4,01

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AKTIVITAS PROBIOTIK BAKTERI ASAM LAKTAT
HASIL FERMENTASI ACAR KUBIS PUTIH (Brassica
oleracea) TAWANGMANGU, SURAKARTA DENGAN
PERLAKUAN GARAM 5% DAN 7,5%

PROBIOTIC ACTIVITY OF LACTIC ACID BACTERIA
FROM FERMENTATION OF WHITE CABAGE (Brassica
oleracea) FROM TAWANGMANGU, SURAKARTA IN 5%
AND 7,5% SALT CONCENTRATION

SKRIPSI

Diajukan untuk memenuhi sebagian dari syarat-syarat guna
memperoleh gelar Sarjana Teknologi Pangan